

Gauge Aids Measurement of Deep-Water Oil, Gas Wells

By Nelson Antosh, Houston Chronicle -- July 6

A change in the way a quartz crystal is grown has led to an innovation that enables a downhole gauge made in Houston to survive the extreme pressures and heat in very deep oil and gas wells.

The latest version of Wood Group Technology's ROC family of gauges is designed to withstand pressures of 25,000 pounds per square inch, a level it calls an industry first.

The previous version of the gauge was rated for 20,000 pounds per square inch.

The gauge, which is installed permanently in wells, was designed and engineered by Wood Group and made by Innova Electronics in Houston.

The gauges use a quartz transducer, which senses pressure and converts it to a frequency that can be read.

Tests were performed to evaluate the gauge's exposure to well conditions of 25,000 pounds per square inch, with the seals and housing tested to 320 degrees and pressures as high as 30,000 pounds per square inch.

Twelve of the gauges have been selected by Shell Exploration and Production Co. for installation in its Llano and Princess fields in the deep-water portion of the Gulf of Mexico, according to a Wood Group spokesman in Houston.

These installations will be in water depths up to 3,637 feet, with the deepest gauge to be set at 25,150 feet, measured from the mud line -- nearly five miles.

Wood Group Production Technology has been supplying gauges to Shell for use in the Gulf since 1993, general manager David Blacklaw said.

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